

## 1.5

### Inverse Functions & “U” Substitution with Logarithms

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

Find the inverse of each function. Leave all answers with positive or rational exponents if possible.

1.  $f(x) = \log(x - 4) + 2$

2.  $f(x) = \log_5(x - 7) - 4$

3.  $f(x) = \log_{10} x + 2$

4.  $f(x) = \ln(x + 1)$

7.  $f(x) = 3 + \ln x$

8.  $f(x) = -\ln(-x)$

9.  $f(x) = -2\ln(x - 3)$

10.  $f(x) = \ln(2x) - 1$

$$12. f(x) = e^x - 3$$

$$13. f(x) = 2^{(x+2)} + 1$$

$$15. f(x) = \frac{1}{3}e^{(2-x)} + 4$$

$$16. f(x) = -2 \cdot 3^{(1-2x)} + 5$$

**Solve each equation using substitution. Show all work. Round to the nearest ten thousandths.**

$$17. e^{2x} - e^x - 6 = 0$$

$$18. e^{4x} - 3e^{2x} - 10 = 0$$

$$21. 3^{2x} + 3^x - 20 = 0$$

$$22. 5^{2x} + 3 \cdot 5^x - 10 = 0$$